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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/542,435	05/02/2006	Jeffrey D. Rothstein	JHU2090-1	2771

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DLA PIPER LLP (US)
4365 EXECUTIVE DRIVE
SUITE 1100
SAN DIEGO, CA 92121-2133

EXAMINER	
MACFARLANE, STACEY NEE	
ART UNIT	PAPER NUMBER
1649	
MAIL DATE	DELIVERY MODE
11/05/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/542,435	ROTHSTEIN ET AL.	
	Examiner	Art Unit	
	STACEY MACFARLANE	1649	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 October 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2,19 and 45-48* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2, 19 and 45-48* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 5, 2010 has been entered.

Response to Amendment

2. Claims 9 and 10 have been cancelled, Claims 2 has been amended and claims 45-48 have been newly added as requested in the amendment filed on October 5, 2010. Following the amendment, claims 2, 19 and 45-48 are pending in the instant application and are under examination in the instant office action.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. As currently amended to recite the glutamate transporter of GLAST/EAAT1 the rejection of Claims 2, 9 and 10 under 35 U.S.C. 102(a) as being anticipated by Ruggiero et al., 2002 (cited on IDS filed 3/8/2010) has been withdrawn.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

As currently amended, Claims 2, 19 and 45-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rothstein et al., WO0130968 (hereafter "the Rothstein publication"), published May 2001 and filed October 23, 2000, in view of Wahle et al., J Cell Biol, 135(6):1876-1877, December 15, 1996.

The Rothstein publication teaches methods comprising contacting cells with test compounds and assaying the ability of these test compounds to increase or decrease in glutamate transport, cytoskeletal stability or chloride flux. Specifically, the Rothstein publication teaches methods "for identifying a compound that modulates a cellular response mediated by a Glutamate Transporter Associated Protein" (GTRAP) or identifies a "compound that inhibits an interaction between a GTRAP and a glutamate transporter protein" (Abstract). The publication further discloses the method wherein the GTRAP "is selected from GTRAP4-41, GTRAP4-48, PCTAIRE-1 and GTRAP3-18, preferably GTRAP3-18. The glutamate transport protein is selected from GLAST, GLT-1, EAAC1, EAAT1, EAAT2, EAAT3, EAAT4 and EAAT5, preferably EAAC1. The compound is selected from a peptide, peptidomimetic, polypeptide, pharmaceutical, chemical compound, biological agent and an antibody. The cell is selected from a neuronal, glial, cardiac, bronchial, uterine, testicular, liver, renal, intestinal, thymus, spleen, placental, skeletal, muscle and smooth muscle cell, and the cell further expresses a RhoGEF protein". The GTRAP3-18 polypeptide comprising SEQ ID NO: 2, recited in newly added claim 46, is identical to the rat GTRAP3-18 protein described in the Rothstein publication (Figure 19) and the nucleic acid sequence of SEQ ID NO: 1 (Claim 47) corresponds to that of Figure 18 disclosed in the Rothstein publication.

The only element that the Rothstein publication does not teach is "detecting the level of glycosylation of a GTRAP3-18 target molecule ... wherein the GTRAP3-18 target molecule is glutamate transporter GLAST/EAAT1", as currently required by claim 2, part (b). However, the Wahle et al. prior art explicitly teach methods for detecting the glycosylation state of the GLAST1 transporter. Additionally, Wahle et al. teach that it was well-known in the art at the time of filing that the glycosylation state of GLAST1/EAAT1 transporter intimately affects transporter expression within the plasma membrane and glutamate transport activity.

It would have been obvious to one of ordinary skill to use the methods for detection of glycosylation level, as taught by Wahle et al., in the methods for screening compounds that affect the interaction between GLAST and GTRAP3-18, as taught by Rothstein et al. A skilled artisan would have been motivated to combine the methods because the Wahle et al. art explicitly teaches that glycosylation affects GLAST transporter expression and activity. In *KSR International Co. v. Teleflex, Inc.*, the Supreme Court has stated that combining prior art elements according to known methods to yield predictable results is *prima facie* obvious. Based upon the guidance and direction within the Wahle and Rothstein prior art references, such combination would have been well within the technical grasp of a skilled artisan. Since each of the methods in combination are merely performing the same function as they did separately, then one of ordinary skill in the art would have been able to predictably combine the elements with a reasonable expectation of success of determining the level of glycosylation of GLAST/EAAT1 proteins in the presence of GTRAP3-18 and test compounds. Therefore, the invention as a whole is rendered obvious.

Conclusion

7. No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to STACEY MACFARLANE whose telephone number is (571)270-3057. The examiner can normally be reached on M-R 5:45 to 3:30, TELEWORK-Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Stucker can be reached on (571) 272-0911. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Stacey MacFarlane
Examiner
Art Unit 1649

/Daniel E Kolker/
Primary Examiner, Art Unit 1649
November 3, 2010